

Name: _____

Best-Fit Lines

- 1) Use the table below showing the life expectancy in the U.S. as a function of the year of birth to answer the questions below.

| Birth Year | Female | Male | Combined |
|------------|--------|------|----------|
| 1940 | 65.2 | 60.8 | 62.9 |
| 1950 | 71.1 | 65.6 | 68.2 |
| 1960 | 73.1 | 66.6 | 69.7 |
| 1970 | 74.4 | 67.1 | 70.8 |
| 1975 | 76.6 | 68.8 | 72.6 |
| 1980 | 77.5 | 70.0 | 73.7 |
| 1985 | 78.2 | 71.2 | 74.7 |
| 1990 | 78.8 | 71.8 | 75.4 |
| 1995 | 78.9 | 72.5 | 75.8 |
| 1998 | 79.4 | 73.9 | 76.7 |

- a) Pick either the Female, Male, or Combined data to work with and create a scatter plot of the data using your graphing calculator. Use 1900 as year 0 and sketch the plot.
- b) Pick two representative points and find the slope.
- c) Write an equation for your best-fit line.
- d) Use your equation to find what birth year will yield a life expectancy of 100 years. Do you think this is reasonable?

Name: _____

2) Use the table below of the men's Olympic discus records to answer the following questions.

| Year | Champion | Country | Distance(m) |
|------|-------------|----------------|-------------|
| 1952 | Insess | USA | 55.03 |
| 1956 | Oerter | USA | 56.36 |
| 1960 | Oerter | USA | 59.18 |
| 1964 | Oerter | USA | 61.00 |
| 1968 | Oerter | USA | 64.78 |
| 1972 | Danek | Czechoslovakia | 64.40 |
| 1976 | Wilkins | USA | 67.5 |
| 1980 | Rashchupkin | USSR | 66.64 |
| 1984 | Danneberg | W. Germany | 66.60 |
| 1988 | Schult | E. Germany | 68.82 |
| 1992 | Ubartas | Lithuania | 65.12 |
| 1996 | Reidel | Germany | 69.4 |
| 2000 | Alelena | Lithuania | 69.3 |

- a) Create a scatter plot of the data using your graphing calculator. Use 1900 as year 0 and sketch the plot.
- b) Pick two representative points and find the slope.
- c) Write an equation for your best-fit line.
- d) Use your equation to find what year will yield a distance of 100 meters. Do you think this is reasonable?